AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF CLAIMS:

Claims 1-8 : (Canceled)

Claim 9 : (Currently Amended) An apparatus for providing a communications network resource to a plurality of classes of use of a network, a different level of service being associated with each class of use, the apparatus comprising:

a) a demand estimator for estimating a demand for each class by computing two demand estimates for two different timescales;

b) a dynamic resource allocator for allocating to each class a proportion of the network resource, the proportion allocated being dependent on the estimated demand for each class, the allocation optimizing use of the available network resource while at the same time ensuring that the level of service of each class is observed; and

c) a communications network element for providing to each class the proportion of the network resource allocated to it~~, the network resource comprising buffer depth in the network element, and the dynamic resource allocator being arranged to dynamically adjust respective buffer depth for each of the classes for queuing data packets~~.

Claim 10 : (Currently Amended) The apparatus according to claim 9, wherein the network resource comprises bandwidth of a communications channel fed by the network element and/or buffer depth in the network element.

Claim 11 : (Previously Presented) The apparatus according to claim 9, wherein the demand estimator uses a traffic envelope scheme in which a characterization of traffic flow is conducted over at least one specified particular period.

Claim 12 : (Previously Presented) The apparatus according to claim 11, wherein a mean and a variance of consecutive traffic envelopes is determined to estimate effective bandwidth requirements.

Claim 13 : (Previously Presented) The apparatus according to claim 12, wherein a first effective bandwidth, E_{long}, is given by $E_{long} = \bar{R}_T + \alpha_{long}\,\sigma_T$ and a second effective bandwidth, E_{short}, is given by $E_{short} = \max_{k=1,2,\ldots,T}\left\{\frac{(\bar{R}_k + \alpha_{short}\sigma_k)kT}{k\tau - \frac{q}{C}}\right\}$ and are used to give a worst case effective bandwidth estimate E of the traffic flow described by the traffic envelope $E=\max\{E_{long}, E_{short}\}$, wherein the bandwidth terms are defined in the present specification.

Claim 14 : (Previously Presented) The apparatus according to claim 9, wherein a best-effort service is provided as one of the classes.

Claim 15 : (Previously Presented) The apparatus according to claim 9, wherein voice and/or video data is transferred across the network.

Claim 16 : (Currently Amended) A method of providing a communications network resource to a plurality of classes of use of a network, a different level of service being associated with each class of use, the method comprising the steps of:

a) estimating a demand for each class by computing two demand estimates for two different timescales;

b) allocating to each class a proportion of the network resource, the proportion allocated being dependent on the estimated demand for each class, the allocation optimizing use of the available network resource while at the same time ensuring that the level of service of each class is observed; and

c) providing to each class the proportion of the network resource allocated to it~~, by providing the network resource with buffer depth in a communications network element, and by arranging to dynamically adjust respective buffer depth for each of the classes for queuing data packets~~.